OHIO CULTIVATOR.

A Semi-Monthly Journal of Agriculture and Horticulture.

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OHIO CULTIVATOR.

A Semi-Monthly journal, devoted to the improvement of Agriculture, Horticulture, and the Mecanic Arts—and the promotion of domestic industry.

M. B. BATEHAM,
EDITOR AND PROPRIETOR.

TERMS:

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Address M. B. BATEHAM, Columbus, O.

To the Friends of Inprovement in Ohio.

Now is the time to work!

The Act for the encouragement of Agriculture, has become a LAW, and may be found in another part of this paper. It provides for a general plan of county and State organization, which we think will meet with general favor among farmers and friends of agriculture, and we sincerely hope that it will be carried into effect with a degree of spirit and energy commensurate with the magnitude and importance of the objects designed to be accomplished, namely, *the elevation of the character and profession of the farmers of Ohio, and the improvement of the practice of Agriculture.*

The first step to be taken is, to prepare for the organization of a spirited and efficient Agricultural Society, in each county. To do this, will, in some cases require considerable labor on the part of a few individuals at the start. But if the heart is in the work, it will speedily be accomplished—others will catch the spirit, and the leaven of improvement will soon spread throughout the whole State.

Do you ask how to begin? Our answer is, first put an agricultural paper into the hands of every farmer in your neighborhood, and, if possible, through the county. Persuade them to subscribe for and read it, and our word for it, you will soon find, in a majority of cases, a desire for more knowledge will be awakened, a Society will be organized and sustained, and a spirit of improvement manifested, which will effect an entire change in the character and practice of the farmers of your county. But without the influence of a spirited agricultural paper to operate upon the minds of farmers, it will be difficult to organize a Society, and impossible to sustain it for any considerable length of time.

Look at this Proposal!

We have on hand several thousand odd numbers of our paper, running through the greater part of last year, and we offer to send them gratis in such numbers and such manner as may be desired, to any persons who will interest themselves in distributing them to the farmers of their neighborhood, for the sake of giving those an opportunity of observing the character of the work, who have not done so before. We have known much good to be accomplished in this way by removing prejudice from the minds of those who had imbibed erroneous notions in regard to such publications. Now, friends, will you not go to work for a short time, with a little of that kind of zeal which politicians manifest in an election campaign. Our cause is more lofty and important than theirs, *and we cannot be* DEFEATED.

To Merchants and professional men, we would say, YOUR interests are all concerned in the advancement of the interests of agriculture, and it is now placed within your power to render essential aid in helping on this movement. Will you not 'circulate the documents,' as the politicians say, and use your influence to induce the farmers of your county to AWAKE, and organize a society, and begin the work of improvement?

☞ NOTE.—County Societies should not be *organized* until after the meeting of the State Board next month; as it is made the duty of the Board to devise and publish some general plan of organization, which will secure some degree of uniformity. This however should no prevent the preliminary steps from being taken NOW.

Great Destruction of Sheep by Dogs.

Mr. Israel Brown, of Montgomery, Hamilton county—a member of the Ohio Legislature last year, writes us, under date of Feb. 18th, 'What is the Legislature doing for the protection of sheep from dogs? I have been informed that between 50 and 100 sheep have been killed by dogs in this neighborhood within a few days. I had the painful view of part of the destruction.'

Another case:—Mr. John Foster, of Cumberland, Guernsey county, informs us that his brother Daniel, in Muskingum county, recently lost *one hundred* valuable sheep by dogs, and others were much damaged. His loss is estimated at $250.

Well, these are only specimens of what is almost daily, or *nightly*, occurring in different parts of the State; but what of that! The farmers of Ohio, through their Representatives, whom they send to Columbus to legislate for their interests, have virtually declared that this destruction of sheep is no great evil, and that the DOGS are of more consequence than *sheep!* And above all do the people of the counties of *Hamilton* and *Muskingum*, where the above cases occurred, claim no sympathy of us for such losses! Even our informant, *Mr. Brown*, above named, voted, last year, against the bill for the protection of sheep; and a Member from Muskingum, *Mr. Ball*, we learn, was an active agent in defeating a similar bill the present year! What right, then, have the farmers of these counties to complain of the dogs' killing their sheep!

Then, too, the farmers of Ohio are a wonderfully patient and uncomplaining class of men; or, as Carlyle would say, '*Midas eared!*' When summer arrives, they will forget their grievances of the winter, and as soon as an appeal is made to their miscalled *patriotism*, which is, in truth, mere *partyism*, they will begin to shout 'hurra for Tod,' or 'hurra for Bebb,' until they get up an excitement which will cause every other interest than those of PARTY to be disregarded or forgotten, and a majority of mere partizans and demagogues will again be appointed to legislate *for their party!*

Such, if we were to judge only from the past, might be anticipated for the future; but we think there are some indications of a change. Some farmers, yes, *many*, in Ohio, are determined to make an effort to place themselves and their profession in that position which they ought ever to occupy, and to command that respect and influence which is their due. To secure these objects, they have resolved to urge their brethren to unite with them in forming County Agricultural Societies, for mutual improvement and interchange of sentiments, and through which, in connection with the central State Board of Agriculture, they can, unitedly, make known their wants and opinions. For these objects, also, they labor to extend the circulation and influence of our paper, which is devoted to their interests, and which must be the chief means of imparting spirit and efficiency to the associations that may be formed.—READER! have *you* resolved to take a part in this great work?

The Alpaca or Peruvian Sheep.

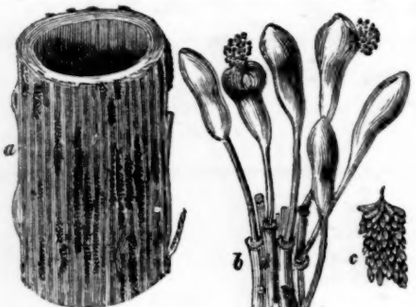
ITS PROPOSED INTRODUCTION INTO THE UNITED STATES.

This beautiful animal ought years ago to have been introduced into this country. There can be little doubt but that it would succeed well in many parts of our greatly diversified climate; and from the increasing demand for the class of goods (called Alpacas,) manufactured from its beautiful glossy wool, there is good reason to believe that its production would be found profitable. It is gratifying therefore to learn that some members of the American Agricultural Association, at New York, have raised the necessary funds, and are about to send an agent to Peru for the purpose of obtaining a number of these animals. It has also been stated that Gov. Paine of Vermont sent out last fall for the same purpose; so that there is every probability that the experiment of raising Alapaca wool will soon be fairly tried in this country. In the hilly portions of the middle and southern states, we should suppose would be found be found the most favorable locations for this purpose; though it is highly probable that these animals will in a few years become acclimated to level as well as hilly countries.

In England the Alpaca has been introduced with very good success; though we have seen no definite accounts of their profitableness as compared with sheep. They are said to thrive well on coarser kinds of feed than any of our domestic animals. The demand for Alpaca wool is already very great, with every prospect of increase. At a late meeting of the British Association for the promotion of science, Mr. W. Dawson said the Alpaca manufactures amount to from £3,000,000 to £5,000,000 per annum (from imported wool) and the introduction of the animals into that country is progressing rapidly. 'I have tried the experiment,' said he, 'on my own lands, on the west coast of Ireland, in the wildest districts of the county of Kerry; and already a company is on the tapis to bring over ten thousand of those animals for the national good. As the race is nearly extinct in Peru, it is desirable to bring them to our isles; their wool, approaching silk, and their flesh being improved by English air and pasture. *Our Sovereign and Prince Albert* are now wearing royal robes manufactured from the wool of these animals, bred in the Royal Park, at Windsor.—*In ten years these animals will add* £20,000,000 *per annum to the national wealth!*'

We shall hear from the Alpacas again some day.

☞ See English news, on last page.



Wheat Rust, (Fungi,) magnified—See O. Cult. Vol. I, p. 17 and 169.

How to prevent Rust in Wheat.

Aye; that's the question—how to prevent rust in wheat! Tell us that, we think we hear our wheat growing readers say, and it will be of more advantage to us than all you can tell us besides! Well, have patience, friends, and 'lend us a hand' in making a few experiments the coming season, and *perhaps* we shall together obtain this greatly desired information, and be able to tell the whole wheat raising public how they may avoid or prevent this evil! We believe it can be done; and we shall not cease our efforts and investigations till the discovery is made; but we must have help and co-operation in this work, from a large number of practical farmers.

Now, to as many of you as are willing to 'lend a hand' in this cause, we wish to give a few hints on conducting experiments the present year: and in the first place we request that you will read our several articles on the subject of rust in the past year's volume of the Cultivator. You will find them by turning to the *index*. You will then be prepared to understand the nature of the malady; that it is not a thing which attacks the plant from *without*—brought on by the east wind, or some other peculiar condition of the weather, (although it may be *developed* by unfavorable weather, so as to be greatly more injurious than it would otherwise have been,) but that it is an organized *fungus* (or mushroom) the seeds of which enter into the circulation of the wheat straw, either by the roots or the pores of the leaves, and begin to vegitate *within* the tissues of straw before the evil appears on the outside.

Now it is the opinion of some eminent naturalists that the minute seeds of these or similar kinds of fungi, almost constantly pervade the air, especially in summer, as is evident by the growth of mould or mildew (*fungus*) in articles of food left in damp places, and in the substance of trees and plants, as soon as they become unhealthy or are dead. It is believed, however, that these destructive parasites seldom if ever develope themselves in, or upon *healthy* living substances; and that the appearance of rust in wheat is in consequence of some derangement of its vital elements, such as deficiency of proper food in the soil, or the excess of some injurious principle. The same, precisely, is believed to be the case with the rot in potatoes, which is also found to be an organized fungus. [See Dr. Buckland's lecture in another column of this paper.]

Supposing these opinions to be correct, (and we see no good reason to dispute them) they at once afford most valuable instructions as to the means that will be the most likely to prove effectual in the prevention of rust; namely, to adopt such modes of tillage, and apply such manures as will cause a perfectly healthy state of the crop—affording it just the right kinds and proportions of those elements which it requires to produce healthy straw and grain, and in such a condition as to be available to the roots of the plant.

Here the science of Agricultural Chemistry comes to our aid; and thanks to the labor of Liebig, Johnston and others, a knowledge of this science is no longer unattainable by farmers. Its most important teachings are already in some degree familiar to quite a number of our readers; and those who have had no other means of instruction than the columns of our paper has afforded during the year, we trust will be able to understand the following suggestions and to try some of the experiments recommended.

The application of *salt* and *lime* has been found a most effectual preventive of all kinds of fungi (rust, mildew, &c.) in vegetable substances; hence, in addition to the adoption of means calculated to secure the more perfect health of the wheat plant, these two substances should be tried as a means of preventing the development of the rust, where it is likely there will be any circumstances to favor its production.

In view of the whole subject therefore, we offer the following hints to those who have opportunity and are disposed to try experiments the coming season; and we earnestly hope, that the magnitude of the interests concerned will induce a very large number of farmers to take some pains to aid in this work of improvement. Every experiment should be conducted with care, and a memorandum made of all the particulars; then the results, carefully noted, should be given to the public after harvest. Who can estimate the benefits that may accrue to the farmers of Ohio from the discoveries and improvements that may thus be made in the production of our great staple, in a single year!

The use of lime, as a spring dressing for wheat, and also in the preparation of land for this crop, we believe will in a few years be very generally practised in this State, and be found highly beneficial (on most soils) in preventing rust, and increasing the product of the crop. We expect an article on this subject from our able friend, D. L. in our next.

Salt also deserves a trial, by way of experiment, where there is reason to anticipate rust. It can be applied in the form of weak brine, from a watering cart or other contrivance, or mixed with some dry substance as lime plaster or ashes, and spread on the ground, say at the rate of one or two bushels of salt to the acre; or, a still better plan, we think, would be to saturate fine charcoal with brine, and when sufficiently dry, spread it on the land.

Charcoal has been found a most valuable application for wheat, as was shown by several statements in our former volume, both as a preparation of the land before sowing, and a spring dressing for the crop. The coal should be broken fine though not into *powder*. Grinding it with a bark mill is the cheapest and best method of preparation. From 25 to 50 bushels should be applied to the acre; and if a light harrowing is given after spreading, it will be all the better for the young wheat, especially on heavy soils. We expect to hear of very many experiments with this article the present season. Some, we are informed, applied it at sowing time.

Ashes is another most valuable and cheap article to use as a dressing for wheat. It is found on analysis that wood ashes contains almost precisely the elements that are used by nature in the formation of healthy wheat straw and grain, and there can be no doubt but that this article, leached or unleached, will be found generally beneficial to the growing crop. We have already published several articles on this subject, to which we must refer those wishing further information concerning it.

Plaster, everybody knows, is the magic helper of the wheat farmers in most parts of our country. [See essay in our paper of Feb. 1st.] In many places however it is too expensive for general use, and is therefore dispensed with. We hope, however, that all who have it at command, will make careful and various experiments with its use on wheat the present season, both by itself and in combination with other articles.

Subsoil plowing.—Persons having wheat on heavy flat soil, which appears cold and hard after becoming dry in the spring, should procure a subsoil plow, (we will lend one for the purpose, if desired in this vicinity) and go over a portion of the field with it; say two or three acres, just enough for an experiment. Two horses can work it with ease, and as it does not turn any furrow, very few plants would be disturbed by the process. Who will try it?

Harrowing wheat fields in spring, has often been practised on heavy soils, and is found to promote the health and growth of the crop very materially.

Rolling, on the contrary, is practised on very light, sandy or mucky soils, with beneficial effects.

☞ Now farmers! who among you will give us the best report of experiments in wheat culture, next fall!

Good Farming in Western Pennsylvania.

Forty bushels of wheat per acre, from land that formerly produced only ten!

Friend Bateham:—I send you some statements from a friend of mine in western Pennsylvania, which I received a few weeks since, in answer to some inquiries I propounded to him chiefly in relation to the culture of wheat. He is considered one of the best wheat raisers in that part of the State. His farm contains 113 acres, about 75 of which is cleared.

The soil is clay mixed with sand, and some round stones, but not many stones of any kind, except lime stone which lay deep. There are some spots of black walnut land, which is light and the hardest to bring to; the clay being the best. When he purchased the land, it was so poor that he was hardly able to raise his bread. He first commenced working other lands on the shares, and hauling the straw home and putting it in the barn yard, feeding it to cattle, &c., turning it just before harvest, and when rotted, hauling it out in the fall on wheat ground, and liming the same ground at the rate of 80 bushels per acre of fresh lime.

He commenced this plan in 1822, before which the average per acre was only about from 7 to 12 bushels of wheat or corn. Lime, manure and clover, and the frequent use of naked fallows are his principal means of improving his lands.—He plows the clover in when in bloom. He puts on a second coat of lime after 6 or 7 years, and finds it equally beneficial on limestone as on other lands. He says, 'I consider the best plan for raising a *first rate* crop of wheat, is to fallow the ground before harvest, plow deep at first. I put in 3 horses and turned it up about 3 inches deeper than it had been plowed before; let i lay till after harvest and then put lime and manure on it, stirred in with the plow, and then sowed and harrowed in my wheat.

'The first field I farmed in this manner, I had 49¼ bushels of wheat per acre, and the preceding crop on the same field was but 7 bushels per acre. My second best crop was farmed in the same manner, and I had 400 bushels off 10 acres.

'My average crop for several of the last years, has been from 30 to 35 bushels per acre—except the two last crops which were hurt with rust and drought. The last was especially hurt with the drought. I had in 13 acres and harvested 327¼ bushels, or over 25 bushels per acre. I always plow twice for wheat, except sometimes if stubble ground I plow but once, and then use a two horse cultivator, and always harrow in. I plow the *same* depth both times.'

His plan for corn, is to turn down a sod, mark 4 feet by 2 1-2, and leave but two stalks in a hill; his largest crop 75, and average crops about 60 bushels per acre.

I would remark on the above, that the wheat crops seem quite remarkable, and we certainly need none of us despair after seeing such crops produced from land in almost the lowest possible condition. Mark, these great wheat crops were produced by clover turned under, fallow, *deep* plowing, lime and manure. But may we not suppose that by substituting fallow crops, such as beans, peas, &c. for naked fallow, nearly or quite as great crops might have been obtained and have the fallow crop clear? There are several other points on which I have my doubts of the correctness of the plan, but I have neither time nor room to notice them at present to much purpose. I would remark that the corn crop is by no means remarkable, nor would we expect it to be without manure. Would it not have been better to have put at least half of the manure under the corn, and had the escaping gasses to the benefit of that crop rather than have them passing into the air? Respectfully, thy friend.

Ezra Cattell.

Harrisville, O. 2d mo., 1846.

P. S. The foregoing affords another evidence that the wheat crops in Ohio have failed more

through want of proper cultivation than through the influence of the seasons, excepting perhaps last year's crop. E. C.

On the Potato Disease.

An interesting Lecture by Dr. BUCKLAND, *of Eng*

We are indebted to Professor Lock, of Cincinnati. for the loan of a copy of a 'Lecture to the "Asmoleon Society," at Oxford, on the nature, origin and extent of the prevailing potato disease, and the danger of approaching scarcity,' by Dr. BUCKLAND. This lecture is by one of the most scientific men of the age, and his opinion upon any question of this kind which he investigates, is entitled to, and receives very high consideration. We find this lecture so full of interesting and important instruction, that we have copied the most important portions into our columns. It contains valuable hints and instruction on various other subjects than the disease of the potato, such as the value of different articles of food, rust in wheat, &c.

We are not prepared to agree fully with the opinion of the learned author in regard to the cause of the potatoe disease — attributing it to the season or the weather; but we have do doubt he is correct in his remarks on the nature of the evil, and the means of its prevention. It is proper here to remark that the honor of making the first discovery and announcement of the true nature of the disease, and suggesting the remedies now most generally recommended in Europe, belongs to a naturalist of our own country; namely, Mr. J. E. TESCHEMACHER, of Boston. We shall speak of this again in our next, and add some hints for the guidance of our readers in preparing and planting their potatoes the coming season.

(*Extracts from Dr. Buckland's lecture.*)

'The potato (*solanam tuberosum*) was first imported to this country by Harriott, the companion of Raleigh, from Virginia, where its native name was Openawk. It had before been brought to Spain from Quito, where its native name was *Papas*, which the Spaniards converted to *Battata*. It was first cultivated in Ireland by Sir R. Southwell, and in Sir W. Raleigh's garden at Youghal, where his gardener, assuming that the seed balls were the object of its cultivation, condemned them as uneatable fruit.— A ship wrecked near the mouth of the Ribble, first brought them to Lancanshire. For more than a century they were grown only in gardens, in 1732, the first field crop was planted in Scotland.

LEIBIG has shewn in his ORGANIC CHEMISTRY that it is one function of the *vegetable kingdom* to prepare the elements of flesh and blood for the use of *animals*. That carbon or charcoal, which is indespensible to the act of breathing, but contributes little to muscle or bone, abounds in potatoes, rice, sago, sugar, brandy, and beer, while the *cereal* grains of wheat, barley, rye, and oats, and seeds of leguminus plants, especially peas and beans, are loaded with the constituents of muscle and bone, ready prepared to form and maintain the muscular fibre of the body of animals, *e. g.* gluten, phosphorus, lime, magnesia, sulphur, &c. Hence, the rapid restoration of the skrunk muscle of the exhausted post-horse by a good feed of oats and beans. Hence the sturdy growth of the Scotch children on oat-cake and porridge, and of broth made of the meal of parched or kiln-dried peas, on this a man can live and do good work for three half-pence a day; while the children of the rich who are pampered on the finest wheat flour, (without the pollard or bran,) and on sago, rice, butter, and on sugar, become fat and sleek, and would often die, as sometimes they do, from such nonnutritious food, but for the mixture of milk and eggs they eat in cakes and puddings. The best biscuits for children have an admixture of burnt bones, and the flour of beans is often mixed by bakers with that of wheat in bread, and (bating the fraud,) the bread is better and more strengthening than if made entirely of wheat. Potatoes contain but little nutriment in proportion to their bulk, they are chiefly made of water and charcoal; so that an Irishman, living exclusively on potatoes, and eating daily 8 pounds, would get more nourishment from 2 pounds of brown bread [which gives more strength than white bread] or from 2 pounds of oatmeal, and from less than 2 pounds of peas or beans; and as about 6 potatoes of middling size to a pound, an Irishman will eat daily 48 potatoes, and a family of seven, 336 potatoes.

Many hybrid varieties have been obtained from Seed, and all these are further propagated by tubers. There is no foundation for the opinion that degeneracy has taken place, and there is no occasion to get new varieties from fresh seed, in consequence of the imperfect ripening, which has led to the *wet rot* in the present year. The desease is not new, it is frequent in Canada, whenever a frost in summer kills the leaves before the tuber is perfect. Loss of the leaves has also caused the decay of potatoes by *wet rot* in the preseut year over nearly all Europe, and in parts of North America. This disease has never yet occurred so generally since the potatoe was brought from America, but it has been locally subject to imperfect formation called *the Curl*, arising probably from want of lime in the soil, and to a *rot* or decay of the sets when planted in a wet soil or in wet weather; the remedy for which is to shake the tubers cut for setting, in a sieve of quick lime, until it forms a skin over the cut surface; it is still better to plant only small potatoes *uncut* as should be done next year.

The juices of the potato plant and its tubers are acrid, but being soluble in water, they are dissolved in boiling, their nature also is changed by heat both in boiling and roasting, so that (like arrow-root, which is starch from the root of the acrid and poisonous *Arum*,) the potato, though acrid when raw, becomes innocuous and nutritious, by the action of heat. Potatoes therefore, should *never be given to hogs or cattle raw.*

I have stated that the cause of the potato disease was atmospheric, viz. quick and sudden changes from hot sunshine to cold and rain in August; this chilled and killed the leaves and stalks of one-third, sometimes one-half the crop. Plants growing under the shelter of woods, trees, and bushes, escaped in fields whereof the unsheltered plants suffered; the dying leaf and stalk was forthwith occupied by one of the many forms of microscopic fungi which nature has provided to quicken the decay of all kinds of vegetables. One of these (*uredo segetum*) forms *smut balls* in wheat; a growth of black fungus changing the flour within the husk into a mass of microscopic mushrooms, or *sporidia*, mixed with fine fibres. Every one of these *sporidia* contains millions of small spawn or *sporules;* this smut has a bad smell which is washed off by water; and when mixed, as it sometimes must be, with bread, is innocuous. Good farmers steep their seed wheat in lime water or sulphuric acid, to kill the spawn of this fungus that may be outside the grain. All kinds of *uredo* follow, but do not cause disease or decay of vegetable matter. Every species of tree has its peculiar fungi which grow on it while alive and healthy. A biscuit or loaf in a close damp closet is in a few days entirely changed into a mass of mould, *i. e.* into millions of fungi; the same happens to mouldy cheese, and other dried animal substances. Exact accounts and figures of wheat fungi were published by Sir J. Banks. Red snow is caused by a red species of *uredo* (*U. nivalis*) in the same family of fungi. The *uredo* of the potato is one of the prettiest in the world; Professor Pouchet traces it through four stages of decay, which end in putrid decomposition:—

1. He finds brown granules on the membranous tissue which forms the starch-cells within the potato.

2. The tissue gets brown, the granules darker and more numerous, and the membranes contract.

3. The granules get still darker, and the membranes break up into rags.

4. The tissue is destroyed, and reduced to fine granules.

Throughout all these stages of decay of the tissue, the starch remains unchanged; it may be collected sweet and good, even from the putrid stage, if washed in three or four waters.

The loss of the leaves caused the imperfect formation of the tissue of the tubers, which, being overcharged with water, assume a premature decay. The sap or albumen of the potato was damaged in France by a severe frost killing the leaves on the night of the 10th of August. The same disease, on a small scale, has been observed before, but not described in France; its effect this year has been, that no potatoes are duly ripe, all are dropsical and have too much water, and less starch than usual, and their cells and tissue imperfect. The disease is worst in wet and damp soils, less in dry, and totally absent from none, except in early sown crops that were ripe before the 10th of August. Chemical analysis shews the potato fungus to contain of Azote 9.45, like many other fungi, and, like wholesome mushrooms.

ALL LEAVES AND STEMS SHOULD BE BURNT.—Looking to next year's danger of continuation of the disease, as the growth of fungi began this year on the diseased leaves and from them descended, through the stalks, into the roots and tubers, it is desirable that all dead stalks and leaves should be burnt; for if buried, they will carry with them myriads of invisible seeds into the ground; and should next summer be wet, and the plants sickly, this buried spawn of fungi may propagate with fearful rapidity. The next year's sets should therefore be planted early, and if the plants continue healthy until the tubers ripen there will be no danger, because all analogy of fungous vegetable parasites shows that their growth *follows*, and does not *precede or cause* disease.

SEED FOR NEXT YEAR.—For planting next year, *small* tubers should be selected and set *entire*, as cutting the unripe and dropsical potatoes of this year may endanger their decay as soon as they are put into the damp ground. I would plant even large tubers entire; but if cut, the sliced parts should be shaken in a sieve of quick lime until a hard skin is formed over the raw surface, as is often done in Scotland. All potatoes for seed should be separated from the rest immediately, and examined weekly till the time of planting, rejecting every one that has the smallest speck. They should be kept in the dryest place possible, in single layers, the lowest resting on at least six inches of straw; every potato should be surrounded with wood-ashes that have not been wet, or with bran, sawdust, chaff, or coal-ashes, mixed with a little quick lime, and not one touching another, nor exposed to the air. In Ireland they might be kept in powder of very dry turf or peat ashes, in a dry hovel.

WHAT CAN BE SUBSTITUTED FOR THE POTATOES ALREADY LOST?—I will now consider the best substitute for at least one-third of the potato crop, which has already perished all over Europe, and this in Ireland is the loss of the only winter food of two million of the people. In times of scarcity, men must take unusual trouble and adopt unusual expedients. Happily this year the crop of TURNIPS is large and good, and already in Hampshire farmers are selling turnips to the poor at a moderate price. This, if done generally, will form one kind of substitute for the lost potatoes. Field CARROTS and PARSNIPS and MANGEL WURZEL which have been grown for sheep and cattle may be also reserved for boiling, and if sold at the usual price of potatoes, will supply more nourishment than an equal weight thereof. I shall not appeal in vain to the farmers of England for this boon, and benefit to their poor neighbours, who may otherwise be distressed for food and suffer hunger. Oil cake will do as well or better for the sheep, and may be bought with the price of the above roots.

PEAS.—It has been already stated that the most nutritious of all vegetable food is the flour of peas, which was the staple food in Europe before potatoes. The flour of kiln-dried peas stirred in boiling water, makes strong and pleasant Scotch brose, on which alone a man may do good work. Barrels of peas-brose-flour may be brought from Scotland, or prepared in England, wherever there is a malt kiln.

In England, pease soup and pease pudding ara still a common and most nourishing food. Our forefathers and their children we know from our Nursery Rhymes, had

> 'Pease pudding hot, pease pudding cold,
> Pease pudding in the pot, nine days old.

Let us for a few months live as they lived 200 years ago. Boiled or fried slices of pease pudding are not unsavoury food; and what boy would not prefer parched peas to nuts?

BARLEY.—Barley bread or cakes *alone* are not good for working men, they are too heating, but mixed with other flour, or eaten with other kinds of food, barley is very nourishing.

OAT cake is the bread of all Scotland, and much of Ireland, and of the North of England; and oat-meal made into broth and porridge, is the universal and almost the only food of Highland children. Let those who have quailed under the charge of a Highland regiment, tell the results.

Bread made of RYE is the chief food of farmers and laborers in Germany and the North of Europe; it is of a dark color, and little used with us, but it is very nourishing, and is a good substitute for wheat.

INDIAN CORN OR MAIZE is the food of man over a large part of the world, and makes bread and cakes, not very palatable to us, but better than nothing in times of scarcity. [What say you to this, Buckeye Farmers?]

RICE and SAGO eaten alone may suffice for persons who take little exercise, for women and children, but not for workingmen. These and potato flour may be added to give bulk to the more nutritious kinds of meal above mentioned.

Lastly, let every poor man get his garden vegetables as forward as possible next spring; let him plant his potatoes early, and when the ground is dry; let the sets be entire, or if cut, let the pieces be shaken in a sieve of quick lime before planting. Before to-morrow's sun has set, let every man bestir himself, and take a little extra trouble in the next week, that he and his children may not suffer hunger in the next year. Let no man shut his eyes and fold his arms, and say there is no danger, but let one and all arise to-morrow and put their shoulders to the wheel. The blessings of Providence will help, and rest on those who help themselves. 'Up and be doing and God will prosper.'

May God comfort us again now after he hath plauged us. Prosper Thon the work of our hands upon us, O prosper Thou our handy work.

PRACTICAL RESULTS.—It is not true that potatoes are wearing out, or require a change of sorts, by raising fresh varieties from seeds; the present disease is only the accidental effect of a wet and cold summer; the tubers will ripen next year if there be sunshine, and if they are planted early. They should not be set in lands where potatoes have grown this year, for such lands will be full of the spawn of fungi, ready to sieze on the next crop should the season be wet. The same kinds should not be grown too long in the same ground. without changing the sets for others grown in a different soil, as farmers change their seed-corn. As the plants growing from the unripe watery and dropsical potatoes of 1845, may next year be weak and less profilic than when the sets are mature and sound, would it not be wise and profitable for merchants to import cargoes of sound potatoes from South America, St. Helena, or any extra European country where the malady has not prevailed in 1845.

2. The malady is not a gangrene, not poisonous, nor is

it a new disease; it is *a wet rot*, or growth of *fungus* in the leaves and stalks, and under the skin of unripe watery roots, caused by the wet and cold summer of 1845 all over Europe and in parts of America. The potatoes are loaded with excess of water, which brings on decay; this decay breeds fungi, and the fungi consume the tissue of the tuber, and then die and rot.

3. The present disease is caused by two much water within them, and dryness is the prevention and cure.—Take the greatest care for next planting; sound small potatoes should be chosen, and kept in separate layers in boxes or baskets, in a very dry place; every layer should be bedded in wood-ashes, saw-dust, chaff, shavings, or chopped straw, or coal ashes, mixed with a very little dry powder of lime. They should be looked over once a week, and every potato removed that has the smallest speck.

4. Next year plant early, and in dry weather, and not, if possible, in grounds which grew rotatoes this year, and which must be full of the spawn of fungi. Wehre they are planted in the same ground, salt or quick lime should be sown, as soon as the plant begins to grow, this will strengthen it to resist the fungus, which attacks only weak and sickly plants and roots. If sliced for setting, the slices should be shaken in a sieve with dry lime, and kept twenty four hours until a skin is formed over the cut surface.

Tobacco around Fruit Trees.

Mr. Editor.—I have been engaged in the tobacco business for a number of years, and I have been in the practice of putting the stalks which are stripped from the tobacco leaves, around my fruit trees, and I have never seen any manure or mode of culture that produced so rapid and healthy a growth. I pile the stalks around the trees early in the Spring, and when rain falls the juice descends into the ground; it kills all the grass and weeds, keeps the ground mellow and rich, and I believe kills the insects about the roots; at all events my trees are never troubled with these insects.

For the sake of experiment, I have put tobacco stems around peach trees in the Summer, when the leaves were turning yellow in consequence of being surrounded with grass, or affected with insects or disease, and the result was that after a few rains the leaves changed to a deep green, and the trees grew rapidly. Let others try it and they will soon be convinced of the utility of the practice. Yours, &c.

William Powell.

Union tp., Morgan Co., O., 1846.

*** We heartily approve of this mode of using tobacco, and believe it will be found advantageous, especially as a preventive of the ravages of the peach tree worm. Those who have our past year's volume will find the same remedy, though differently applied, recommended by a lady, on page 93.—Ed.

Great discovery respecting Cows.

The February number of Skinner's Farmer's Library, introduces to the American public, a translation of a French work, giving a full discription of what purports to be a wonderful discovery in Kine ology—namely, an infallible method '*whereby the quality and quantity of milk which any cow will give, may be accurately determined by observing natural marks or external indications alone; the length of time she will continue to give milk, &c. &c.*'

This discovery is said to have been fairly tested under the direction of several agricultural societies of France, and the claims of its author, *M. Guenon* have been so fully substantiated that he has been awarded a gold medal and other honors. The 'natural marks' upon which the system is founded, are nothing more than certain 'quirls' of the hair upon the skin of the twist and back part of the thighs of the cow. The difference in the form and position of these 'quirls' is illustrated by engravings; and a knowledge of these is all that is required to judge of the character of a cow, or even a 'calf of three months old.'

Now with all deference to the superior judgment and discretion of Father Skinner, we must be permitted to entertain a shade or two of doubt in relation to this 'discovery.' At any rate, we shall decline endorsing it, till we have had that 'seeing which is believing.' The matter will soon be put to the test,—and if one-half that is claimed for it, is true, the discovery is really an important one. We shall speak of this subject again, and if thought desirable, give our readers the substance of the discovery—copy right or no copy right.

OHIO CULTIVATOR.

COLUMBUS, OHIO, MARCH 1, 1846.

Good News! The Bill has passed!

We congratulate the friends of agriculture in Ohio, on the final passage, by the legislature, of an ACT FOR THE ENCOURAGEMENT OF AGRICULTURE. On referring to this law, which is given in another column, it will be seen that it is somewhat materially altered from the Bill agreed on by the joint committees, and introduced by Mr. Wetmore in December. It was found impossible to obtain any appropriation for this purpose from the State Treasury; hence the proposition for employing a State Commissioner of Agriculture, had to be abandoned, and as no compensation could be given to members of the State Board, it was thought advisable by some, to increase the number of that body so as to secure, if possible, the co-operation of a larger number of patriotic and public spirited men. We sincerely hope that such will be found the effects of that measure, and we have full confidence that the law generally will prove advantageous to the interests of the farming community and the state at large.

It will be seen at a glance that this law is a very great improvement on the old one relating to agricultural societies (now repealed.) That law only made it the duty of the County Commissioners to grant the Society a trifling amount from the county treasury 'if they deemed it expedient.' Thus leaving the commissioners to bear all the blame and opposition that any evil disposed or prejudiced person might feel disposed to attach to them; and in fact directly tending to produce this kind of opposition, so that in a majority of cases the commisioners declined granting the appropriation, and consequently the societies soon failed. Again, the old law made no provisions for a State Board, or central collecting and diffusing power, which is necessary to impart life and vigor to the numerous county societies, and by showing each one what all of the others have accomplished, infuse a laudable spirit of emulation and county pride among their members.

The Annual Meeting in December, provided for in the new law, can hardly fail of being one of great interest and importance; and the Annual Report of the Board will form a document of more practical value than any other that will probably be published by the legislature.

Now, then, the question is, how many counties in the State will organize societies the present spring? ☞ See remarks on first page.

Notices of Agricultural Publications, and of samples of fine wool are unavoidably crowded out; together with numerous inquiries on other matters.

Postage.—We do not often complain of this matter, es pecially since the reduced rates, but some of our subscribers are in the habit of writing us letters of inquiry, asking information for their own benefit and taxing us with postage! Now in charity we presume these cases are attributable to inadvertance; but is not such carelessness near akin to dishonesty? And will it be any wonder if it should wound our temper a little after awhile?

Artichokes.—We will procure a supply of these roots for all our subscribers who desire them and send their orders soon. The price will not exceed $1,00 per bushel.

Cranberry Roots.—Judge Short, of North Bend, (Cleves P. O, Hamilton Co.,) wishes to try an experiment in the culture of cranberries; can any person in that part of the State furnish him with two or three dozen of the roots?

Those who have grafts to cut, or grapevines to trim, should perform this work without delay.

The Weather has been remarkably cold for the past two weeks in these parts, and ground covered with 8 to 12 inches of snow, making fine sleighing. 'The oldest inhabitant' can scarcely remember a winter so severe as this, in central Ohio. It is highly favorable to young wheat, and may be followed by a most productive season.

History of the 'mammy Bean,' or Gate Apple, in our next. Also remarks on the varieties of clover & grass.

☞ The Law for the protection of fruit trees, gardens, &c., will be found in our next.

The Legislature adjourned this morning, March, 2d, after a session of just three months.

Fancy Stock.—Our best thanks ard due to Messrs. E. T. & J. L. Cox, of Zanesville, for a couple of fancy chickens, for our little farm.

A Correction.—In our last No. p. 31, speaking of Mr. Nelson's mode of growing corn, we said he appplies the manure to his land in the 'spring.' We should have, said, *in the fall.*

Married, at the 'Evergreen place,' the residence of Judge Wood, near Cleveland, on the 17th ult. Mr. F. R. Elliott, editor of the W. R. Magazine ot Agriculture, &c., to Miss Sophia A. youngest daughter of Mr. Henry Hopkins of Medina.

All right, Brother E. Much joy to you and your fair bride; and, since you have been so *fortunate* as to loose that *bet*, you may send us '*those oysters*' during this cold weather; we hope to have the pleasure of sharing the other 'fixens' with you and Mrs. E. at home in the 'Doves' Nest,' some evening next summer.—Ed. O. C.

Ohio Institution for the Blind.

We are indebted to Mr. Chapin, the Superintendant of the Ohio Institute for the education of the Blind, for a copy of his annual Report to the Legislature, relative to the condition and prospects of that excellent Institution; also for a pamphlet of 62 pages, by the same author, entitled a Report on the Benevolent Institutions of Great Britain and Paris; being observations made by Mr. Chapin, during his visit to Europe the past summer, at which time he spent a large portion of his time in visiting schools and asylums for the Blind, Deaf and Dumb, and the Insane.

The Institution of our own State, for the education of the Blind, is one among others of which the citizens of Ohio may justly feel proud. The report for the past year, represents its condition as highly prosperous, and reflects much credit on the Superintendant, and all concerned in its management. The number of pupils at the present time, is 68; admitted during the past year, 16; discharged, having completed the course of education, 10.

We designed making a few extracts from the report, but our space will not permit. Mr. Chapin's observations on the Benevolent Institutions of Europe, are quite interesting, and will be especially appreciated by all who are concerned in the management of similar establishments in this country. In comparing those of this country, with the institutions of the old world, his observations corroborate what has been asserted by others, that our's are superior in many respects, and especially in the regard that is paid to the intellectual and moral culture of the pupils.

Salt as a Fertilizer.—We have in another part of this paper recommended, as an experiment, the application of salt on the growing wheat crop. Since writing that article, we observe in a late number of the Genesee Farmer, Dr. Lee says:—

"In regard to the use of salt as a fertilizer, from 3 to 5 bushels may be sown. Unlike gypsum, ashes, and barn-yard manure, salt will all dissolve at once, and hence will last in the soil but a short time. We prefer to apply 1½ bushels early in the spring, as soon as the snow is off, and an equal quantity in four weeks thereafter, sown broad cast like plaster, with which we should mix it. We have a little apprehension that some of the particles of salt might fall on the centre of wheat plants, lodge, and when dissolved injure this tender vegetable. One could easily scatter a few handsful, in the usual way of sowing, wait a few days, and then satisfy himself whether it would do to sow salt over a larger surface. We have never heard of any injury, but in all experi-

ments, due care should be used to avoid loss in any way.

The fertilizers which promise the greatest benefit to the practical farmers of this State are salt, gypsum, lime, wood ashes, and charcoal. To render salt and gypsum more available, the duty should be taken off from salt and the canal tolls reduced to a mere nominal sum on both salt and plaster."

LAW OF OHIO.

An Act for the Encouragement of Agriculture,
PASSED FEBRUARY 27, 1846.

Sec. 1. Be it enacted by the General Assembly of the State of Ohio, That whenever thirty or more persons, residents of any county, or district embracing two counties of this State, shall organize themselves into a society for the improvement of Agriculture within said county or district, and shall have adopted a constitution and by-laws, agreeably to the rules and regulations to be furnished by the Ohio State Board of Agriculture herein after created, and shall have appointed the usual and proper officers; and when the said society shall have raised and paid to the Treasurer, by voluntary subscription, or by fees imposed upon its members, any sum of money in each year, not less than fifty dollars; and whenever the President of said society shall certify to the respective county Auditors, the amount thus paid, attested by the oath of the Treasurer before a Magistrate, it shall be the duty of the said county Auditors embraced within the district in which such society shall be organized, to draw an order on the Treasurer of the respective counties, in favor of the President and Treasurer of said society, for a sum equal to the amount thus raised; Provided, it does not exceed half a cent to each inhabitant of the said county, upon the basis of the last previous national census, but not to exceed in any county the sum of two hundred dollars; and it shall be the duty of the Treasurer of the said county to pay the same.

Sec. 2. That it shall be the duty of the several county or district societies which may be formed under the provisions of the preceding section, during the continuance of this act, annually to offer and award premiums for the improvement of soils, tillage, crops, manures, implements, stock, articles of domestic industry, and such other articles, productions and improvements, as they may deem proper; and may perform all such acts as they may deem best calculated to promote the agricultural and household manufacturing interests of the district, and of the State; and it shall also be their duty, so to regulate the amount of premiums and the different grades of the same, as that it shall be competent for small as well as large farmers to have an opportunity to compete therefor; and in making their awards, special reference shall be had to the profits which may accrue, or be likely to accrue from the improved mode of raising the crop, or of improving the soil, or stock, or of the fabrication of the articles thus offered, with the intention that the premium shall be given for the most economical mode of improvement; and all persons offering to compete for premiums on improved modes of tillage, or the production of any crops or other articles, shall be required before such premiums are adjudged to deliver to the awarding committee a full and correct statement of the process of such mode of tillage or production, and the expense and value of the same, with a view of showing accurately the profits derived or expected to be derived therefrom.

Sec. 3. It shall be the duty of each county or district society, to publish annually a list of the awards, and an abstract of the Treasurer's account, in a newspaper of the district; and to make a report of their proceedings, during the year, and a synopsis of the awards for improvements in agriculture, and household manufactures, together with an abstract of the several descriptions of these improvements, and also make a report of the condition of agriculture in their county or district, which reports shall be made out in accordance with the rules and regulations of the Ohio State Board of Agriculture, and shall be forwarded to the State Board at their annual meeting in December in each year. And no subsequent payment shall be made from the county Treasury, unless a certificate is presented to the Auditor from the President of the State Board, showing that such reports have been duly made.

Sec. 4. That M. L. Sullivant and Samuel Medary, of Franklin county; Allen Trimble, of Highland; Samuel Spangler and John Chaney, of Fairfield; Darius Lapham, of Hamilton; John B. Bayless, of Jefferson; Greenbury Keen, of Portage; Simeon Perkins, of Summit; John I. Vanmetre, of Pike; Archer Watts and Felix Renick, of Ross; Elias Florence and William Gill, of Pickaway; Jared P. Kirtland, of Cuyahoga; David Gregory, of Delaware; John McElderry, of Tuscarawas; Isaac Moore, of Lake; John Fuller, of Erie; George W. Gibbons, of Muskingum; H. N. Gillett, of Lawrence; Anson Howard, of Champaign; John Eckels, of Hancock; Liba Lindley, jr., of Athens; Henry C. Brish, of Seneca; Samuel Myers, of Crawford; David Stevens, of Richland; John Martin, of Columbiana; Gilman C. Mudgett, of Paulding; L. C. Goble, of Putnam; Isaac Neiswanger, of Belmont; Aaron Johnson, of Perry; Wm. McFadden, of Harrison; Frederick Bonner, of Greene; Jacob T. Pugsley, of Fayette; Geo. W. Cowden, of Trumbull; Billius Kirtland, of Mahoning; Richard Warner, of Medina; John M. Milligan and Absolom Dean, of Butler; John Johnston, of Miami; Jesse Wilson, of Shelby; Abraham Studdebaker, of Darke; Joseph Burns, of Coshocton; James L. Reynolds, of Stark; Newton Larsh, of Preble; A. E. Strickler, of Clinton; Benjamin Ruggles, of Belmont; Henry Protzman, of Montgomery; William R. Putnam, jr., of Washington; James Loudon, of Brown; Dowty Utter, of Clermont; and Beatty McFarland, of Jefferson county, be and they are hereby created a body corporate, with perpetual succession, in the manner hereafter described, under the name and style of the 'Ohio State Board of Agriculture.'

Sec. 5. It shall be the duty of said board, or any ten of them, to meet in the city of Columbus, on the first Wednesday in April, after the passage of this act, and to organize by appointing a president, secretary, and treasurer, and such other officers as they may deem necessary; also, determine by lot the time that each member shall serve, so that the term of service of one half of the members shall expire annually on the day of the annual meeting in December; and the president shall have power to call meetings of the board whenever he may deem it expedient.

Sec. 6. There shall be held, in the city of Columbus, on the first Wednesday after the first Monday in December, an annual meeting of the Ohio State Board of Agriculture, together with the president of each county agricultural society, or other delegates therefrom, duly authorized, who shall, for the time being, be *ex officio* members of the State Board of Agriculture, for the purpose of deliberation and consultation as to the wants, prospects, and condition of the agricultural interests throughout the State; and at such annual meeting, the several reports from county societies shall be delivered to the president of the Ohio State Board of Agriculture; and the said presidents and delegates shall, at this meeting, elect suitable persons to fill all vacancies in the Ohio State Board of Agriculture.

Sec. 7. And it shall be the duty of the said board to make an annual report to the General Assembly of the State, embracing the proceedings of the board for the past year, and an abstract of the proceedings of the several county agricultural societies, as well as a general view of the condition of agriculture throughout the State, accompanied by such recommendations as they may deem interesting and useful.

Sec. 8. That the act to authorize and encourage the establishment of agricultural societies in this State, and for other purposes therein set forth, passed March twelfth, one thousand eight hundred and thirty-nine, be and the same is hereby repealed; provided, the acts done, obligations incurred, and rights acquired, under the provisions thereof, shall remain in no wise altered or affected by this act.

ELIAS F. DRAKE,
Speaker of the House of Representatives.
SEABURY FORD,
Speaker of the Senate.

LADIES' DEPARTMENT.

☞ We have received several communications for our Ladies' Department which are not quite suited for our purpose, without some amendations, which we have not time to make now. ELLEN is mistaken in supposing that her communication is not 'sentimental.' Her sentiments are good, but we would prefer facts and practical instructions, to thoughts and opinions, unless expressed with more than common force and talent.

A communication signed IDA, containing strictures on female education, is very well written, and expresses much truth, though we have doubts whether its publication will prove interesting or profitable to many of our readers. Besides, we are half inclined to suspect it was written by some one—an old bachelor perhaps—whose mind has become a little *soured* with age and disappointments; and we cannot admit such characters into our 'ladies' saloon.' If we are mistaken, however, and learn that it is really the production of a lady, the communication shall be inserted.

A female friend in Belmont Co. has our thanks for her good wishes. Such letters as hers, though we may not publish them, always accomplish one of the objects desired by the writers—they 'encourage us in our labors,' by assuring us that our labors are appreciated by those for whose benefit they are designed.

☞ Hints on floriculture, &c. will be given when the proper time arives. We are short of space now.

MECHANICAL DEPARTMENT.

☞ Every Farmer, and every Laboring Man, as well as every Mechanic, will find great and frequent advantage from a knowledge of the Science of Mechanics. Try it, young men, and see!

On the Mechanic Powers.

From Lardner's Popular Lectures on Science and Art: copied by the permission of the publishers.

WHEELWORK.—*Continued from our last, page 29.*

Toothed wheels are of three kinds, distinguished by the position which the teeth bear with respect to the axis of the wheel. When they are raised upon the edge of the wheel, as in fig. 26, they are called *spur wheels*, or *spur gear*. When they are raised parallel to the axis, as in fig. 28, it is called a *crown wheel*. When the teeth are raised

Fig. 28.

on a surface inclined to the plane of the wheel, as in fig. 29, they are called *bevelled wheels*.

Fig. 29.

If a motion round one axis is to be communicated to another axis parallel to it, spur gear is generally used. Thus, in fig. 27, the three axes are parallel to each other. If a motion round one axis is to be communicated to another at right angles to it, a crown wheel, working in a spur pinion, as in fig. 28, will serve; or the same object may be obtained by two bevelled wheels, as in fig. 29.

If a motion round one axis is required to be communicated to another inclined to it at any proposed angle, two bevelled wheels, can always be used. In fig. 30, let A B and A C be the two axles; two bevelled wheels, such as

Fig. 30.

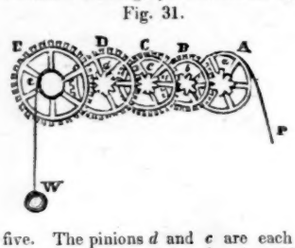
D E and E F, on these axles will transmit the motion or rotation from one to the other, and the relative velocity may as usual, be regulated by the proportional magnitude of the wheels.

The most familiar case in which wheelwork is used to produce and regulate motion merely, without any reference to weight to be raised or resistances to be overcome,

is that of chronometers. In watch and clock work, the object is to cause a wheel to revolve with a uniform velocity, and at a certain rate The motion of this wheel is indicated by an index or hand placed upon its axis, and carried round with it. In proportion to the length of the hand, the circle over which its extremity plays is enlarged and its motions become more perceptible. This circle is divided, so that very small fractions of a revolution of the hand may be accurately observed. In most chronometers it is required to give motion to two hands, and sometimes to three. These motions proceed at different rates, according to the subdivisions of time generally adopted.—One wheel revolves in a minute, bearing a hand which plays round a circle divided into sixty equal parts; the motion of the hand over each part indicating one second, and a complete revolution of the hand being performed in one minute. Another wheel revolves once, while the former revolves sixty times; consequently the hand carried by this wheel revolves once in sixty minutes, or one hour.—The circle on which it plays is, like the former, divided into sixty equal parts, and the motion of the hand over each division is performed in one minute. This is generally called the *minute hand*, and the former the *second hand*.

A third wheel revolves once, while that which carries the minute hand, revolves twelve times; consequently this last wheel, which carries the *hour hand*, revolves at a rate twelve times less than that of the minute hand, and therefore seven hundred and twenty times less than the second hand. We shall now endeavor to explain the manner in which these motions are produced and regulated. Let A, B, C, D, E, fig. 31, represent a train of wheels, and *a*, *b*, *c*, *d*, represent their pinion, *e* being a cylinder on the axis of the wheel E, round which a rope is coiled, sustaining a weight, W. Let the effect of this weight, transmitted through the train of wheels, be opposed by a power, P, acting upon the wheel A, and let this power be supposed to be of such nature as to cause the weight W to decend with a uniform velocity, and at any proposed rate. The wheel E carries on its circumference eighty four teeth. The wheel D carries eighty teeth: the wheel C is also furnished with eighty teeth, and the wheel B with

Fig. 31.



seventy five. The pinions *d* and *c* are each furnished with twelve leaves, and the pinions *b* and *a* with ten.

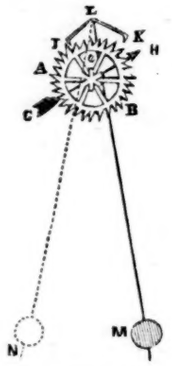
If the power at P be so regulated as to allow the wheel A to revolve once in a minute, with a uniform velocity, a hand attached to the axis of this wheel will serve as the *second hand*. The pinion *a*, carrying ten teeth, must revolve seven times and a half to produce one revolution of B, consequently fifteen revolutions of the wheel A will produce two revolutions of the wheel B; the wheel B therefore revolves twice in fifteen minutes. The pinion *b* must revolve eight times to produce one revolution of the wheel C, and therefore the wheel C must revolve once in four quarters of an hour, or in one hour. If a hand be attached to the axis of this wheel, it will have the motion necessary for the minute hand. The pinion *c* must revolve six and two thirds times to produce one revolution of the wheel D, and therefore this wheel must revolve once in six and two thirds hours. The pinion *d* revolves seven times for one revolution of the wheel E, and therefore the wheel E will revolve once in forty-six and two thirds hours.

On the axis of the wheel C, a second pinion may be placed, furnished with seven leaves, which may lead a wheel of eighty four teeth, so that this wheel shall turn once during twelve turns of the wheel C. If a hand be fixed upon the axis, this hand will revolve once for twelve revolutions of the minute hand fixed upon the axis of the wheel C; that is, it will revolve once in twelve hours. If it plays upon a dial divided into twelve equal parts, it will move over each part in an hour, and will serve the purpose of the hour hand of the chronometer.

We have here supposed that the second hand, the minute hand, and the hour hand, move on seperate dials. This, however, is not necessary. This axis of the hour hand is commonly a tube, enclosing within it that of the minute hand, so that the same dial serves for both. The second hand, however, is generally furnished with a separate dial.

We shall now explain the manner in which a power is applied to the wheel A, so as to regulate and equalize the effect of the weight W. Suppose the wheel A furnished with thirty teeth, as in fig. 32; if nothing check the motion, the weight W would descend with an accelerated velocity, and would communicate an accelerated motion to the wheel A. This effect, however, is interrupted by the following contrivance: L M is a pendulum vibrating on the centre L, and so regulated that the time of its oscillations is one second. The pallets I and K are connected with the pendulum, so as to oscillate with it. In the position of the pendulum represented in the figure, the pallet I, stops the motion of the wheel A, and entirely suspends the action of the weight W, fig. 31, so that for a moment the entire machine is motionless. The weight M, however, falls by its gravity towards the lowest position, and disengages the pallet I from the tooth of the wheel. The

Fig. 32.



weight W begins then to take effect, and the wheel A turns from A toward B. Meanwhile the pendulum M oscillates to the other side, and the pallet K falls under a tooth of the wheel A, and checks for a moment its further motion. On the returning vibration, the pallet K becomes again disengaged, and allows the tooth of the wheel to escape, and by the influence of the weight W, another tooth passes before the motion of the wheel A is again checked by the interposition of the pallet I.

From this explanation, it will appear that, in two vibrations of the pendulum, one tooth of the wheel A passes the pallet I, and therefore, if the wheel A be furnished with 29 teeth, it will be allowed to make one revolution during 60 vibrations of the pendulum. If, therefore, the pendulum be regulated so as to vibrate seconds, this wheel will revolve once in a minute. From the action of the pallets in checking the motion of the wheel A, and allowing its teeth alternately to *escape*, this has been called the *escapement* wheel, and the wheel and pallets together are generally called the *escapement*, or '*scapement*.

We have already explained that, by, reason of the friction on the points of support, and other causes, the swing of the pendulum would gradually diminish, and its vibration at length cease. This, however, is prevented by the action of the teeth of the 'scapement wheel upon the pallets, which is just sufficient to communicate that quantity of force to the pendulum which is necessary to counteract the retarding effects, and to maintain its motion. It thus appears that, although the effect of the gravity of the wight W in giving motion to the machine is at intervals suspended, yet this part of the force is not lost, being, during these intervals, employed in giving to the pendulum all that motion which it would lose by the resistances to which it is inevitably exposed.

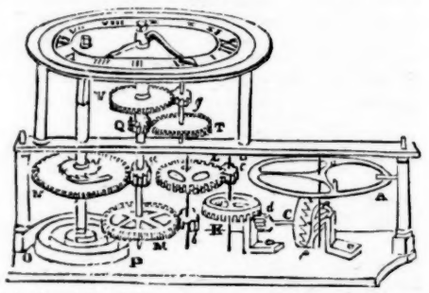
In stationary clocks, and in other cases in which the bulk of the machine is not an objection, a descending weight is used as the moving power. But in watches and portable chronometers, this would be attended with evident inconvenience. In such cases, a spiral spring, called the *main-spring*, is the moving power. The manner in which this spring communicates rotation to an axis, and the ingenious method of equalizing the effect of its variable elasticity, by giving to it a leverage, which increases as the elastic force diminishes, has been already explained.

Fig. 20. Fig. 21.

A similar objection lies against the use of a pendulum in portable chronometers. A spiral spring of a similar kind, but infinitely more delicate, called a *hair-spring*, is substituted in its place. This spring is connected with a nicely balanced wheel, called the *balance-wheel*, which plays in pivots. When this wheel is turned to a certain extent in one direction, the hair-spring is coiled up, and its elasticity causes the wheel to recoil, and return to a position in which the energy of the spring acts in the opposite direction. The balance wheel then returns, and continually vibrates in the same manner. The axis of this wheel is furnished with pallets similar to those of the pendulum, which are alternately engaged with the teeth of a crown wheel, which takes the place of the 'scapement wheel already described.

A general view of the work of a common watch is represented in fig. 33. A is the balance wheel, bearing pallets *p p* upon its axis; C is the crown wheel, whose teeth are suffered to escape alternately by those pallets in the manner already described in the 'scapement of a clock.—On the axis of the crown wheel is placed a pinion, *d*, which drives another crown wheel, K. On the axis of

Fig. 33



this is placed the pinion *c*, which plays in the teeth of the third wheel, L. The pinion *b*, on the axis of L, is engaged with the wheel M, called the *centre wheel*. The axle of this wheel is carried up through the centre of the dial. A pinion, *a*, is placed upon it, which works in the great wheel, N. On this wheel the main-spring immediately acts. O P is the main-spring stripped of its barrel. The axis of the wheel M, passing through the centre of the dial, is squared at the end to receive the minute-hand. A second pinion, Q, is placed upon this axle, which drives a wheel, T. On the axle of this wheel, a pinion, *g*, is placed, which drives the hour wheel V. This wheel is placed upon a tubular axis, which encloses within it the axis of the wheel M. This tubular axis, passing through the centre of the dial, carries the hour-hand.

The wheels A, B, C, D, E, fig. 31, correspond to the wheels C, K, L, M, N, fig. 33; and the pinlons *a*, *b*, *c*, *d*, *e*, fig 31, correspond to the pinions *d*, *c*, *b*, *a*, fig. 33. From what has already been explained of these wheels, it will be obvious that the wheel M, fig. 33, revolves once in an hour, causing the minute-hand to move round the dial once in that time. This wheel at the same time turns the pinion Q, which leads the wheel T. This wheel again turns the pinion *g*, which leads the hour wheel V. The leaves and teeth of these pinions and wheels are proportioned, as already explained, so that the wheel V revolves once during twelve revolutions of the wheel M. The hour-hand, therefore, which is carried by the tubular axle of the wheel V, moves once round the dial in twelve hours.

Our object here has not been to give a detailed account of watch and clock work. Such a general account has only been attempted as may explain how tooth-and-pinion work may be applied to regulate motion.

(*Our next will be on the* PULLEY.)

Letter from Samuel Williams.

Manufactures and Agriculture---The right spirit moving in Seneca Co., N. Y.---Farmer's prejudices---need of scientific knowledge.

FRIEND M. B. BATEHAM :—I like the criticism on a new theory of creation, by your Mt. Tabor correspondent, as much for it humor, as for its 'common sense.' But your article from the 'Michigan Tocsin,' draws wrong conclusions from true premises. He, the author, attributes the deterioation in the wheat crop of the west, to the export of that article, as nothing is returned to the soil to compensate the loss. To remedy this evil, he advocates the Chinese plan, of making and consuming all at home, thus cutting off all intercourse with the *outside barbarians*. Did he ever read Crabbe's Borough,

> 'Behold a sailor just returned from sea,
> His wife beside, a child on either knee ?'

I presume not, or he would not now aver, that the merchant and the sailor, are a useless expense, an excrescence or fungus on the healthy body politic. He calls our naval officers lazy.—If he could be in the waist of a line of battleship, one squally night at sea, methinks he would not then charge the officers of the deck, with earning their living at the rings of the anchors. He also commits a cardinal error in his statistics of specie. He says there is a constan 'drain of specie from this country' to pay for imports. Now, take up any five consecutive years since the war with England, and our import of specie has far exceeded the export. According to the Treasury Reports, our imports of specie from 1821 to 1841, exceeds our exports of the same metals $47,741,600. In the *years of glory*, our import of specie very much exceeded the export, as we then paid our debts in *western* and other State stocks, United States Bank stocks, and other paper devices.

But I must stop, for your paper is no place for a squabble on political economy; suffice it to say, that our manufactures are already in advance of our agriculture, so far as variety and perfection is concerned. Think of one western town, Pittsburgh, turning out 200 tons of rolled iron daily, for one article, to say nothing of the matchless product of its work-shops, cotton mills, foundries, ship yards, &c. &c. But I trust no Ohio farmer is so simple, as to complain of a foreign market for his products merely because the export is a drain on his soil, so long as he is daily wasting or failing to make on his farm, only the smallest provision in the shape of manures, for the growth of future crops.

I am glad to say that the farmers of Seneca are fast waking up to the real interests and dignity of their calling. Farmer's clubs have been formed in almost every town. Here the 'face of the man sharpens that of his friend.' Here the practical farmer can call the *book* to his aid with impunity; and the neophite here learns that the *book* alone can enable him to understand and explain the 'hope that is in him;' hence the demand for agricultural papers has more than doubled in this county in the last two months.

Strange as it may seem, farmers will only be taught by a purely practical farmer, that there are some secrets in farming not yet 'included in their philosophy.' Yet no man so readily as the farmer, gives up his right in legislation to the lawyer, or his hope of heaven to the dictation of the priest. But the theoretical farmer, and the agricultural chemist, almost invariably heretofore, presented a hostile front—a sort of porcupine exterior, armed at all points. The day, however, is now approaching when *truth* as *truth*, will be received by the farmer, with the same faith, whether from the laboratory of the chemist or the pages of the *book*, as though it came really from one of themselves.

To make a good lawyer or a priest, long and patient study is considered indispensible. To make a good mechanic, at least some knowledge of mathematics is necessary, before he can be entrusted to frame a building, or to construct any article in mechanics, requiring a given power, regularity or motion. But ask a farmer what it takes to make a good farmer, and he will by his own showing, place farming, in an intellectual position as a science, far below that of the mechanic. Nine times out of ten he will place it on a level with that of the wood sawyer, or the Irish hod carrier. Make farming what God in the beginning designed it to be,—an intellectual occupation, and you will rid the labor o its drudgery, of all its terrors. But as long as the farmer pursues his calling mechanically, without other light than traditionary practice, or the vagaries of the *crazy* moon, just so long will he be a mere wood sawyer, a drudge, stimulated only by a fear of want; a stimulous akin to that felt by his fellow-laborer, the horse, who in turn fears only the whip. Every man's farm is a great chemical laboratory. Yet how many hundred farmers have I heard complain of the drudgery of their calling. But who ever heard of a chemist complain of the drudgery of his art, shut up as he is day after day amid the fumes of liberated acids! Did the great Fulton ever complain of the drudgery of his labor in constructing the steam engine! I presume not, for here the immortal MIND lifted up and sustained the mortal BODY. Verily every farmer is a practical chemist on a grander scale than him of the laboratory, but he does not know it. Let him study the science of his great calling, and his body will be sustained by the co-working of his mind. Then, and not till then, will he have that faith in the unerring laws of nature, which will nerve his arm to combat and insure the victory.

Burn a bushel of wheat, and the analysis of its ashes shows that it contains more of the phosphates of lime and potash, than any other grain; yet how few farmers manu e their wheat fields with a view to this fact. Common wood ashes, burned or crushed bones, horns, hoofs, poudrette, urine, &c. furnish these phosphates in the greatest profusion. In England where 40 to 70 imperial bushels of wheat are raised to the acre, they have no wood ashes. Think of this, farmers of Ohio, and then ask yourselves, why it is that the English farmer gets a four-fold larger product of wheat from the acre. But I am making too long a letter. S. W.

Waterloo, Seneca Co., N. Y., Feb. 1846.

Inquiries---Summer pasture---Buckwheat as Manure.

MR. BATEHAM:—I wish to make an inquiry or two of you; to be short, (which is your request,) I purchased a small farm last fall, and I find most of it is under the plow, leaving only a small field for pasture, and that is nearly one half destroyed by worms. Do you not know of something that I might sow upon it, that would grow rapidly and afford good feed the next summer? Never having practised turning stock into the road to get a living, I do not like to do it now.

Please give me your opinion, also as to the benefit of sowing buckwheat to plow under as manure for wheat. Can you not find a place in your first March number to answer these inquiries, as I wish to know early enough to sow as soon as the land will admit. Yours, &c.

WILSON PHELPS.

Morris, Knox Co. O., Feb. 1846.

REPLY.—We do not know of any article that can advantageously be sown upon a worm eaten field that will produce good *pasture* feed for cattle the ensuing summer. If the grass is now mostly destroyed, we would advise Mr. Phelps to plow it up, and hire some in its stead of his neighbors, if it can be done conveniently, until a new meadow can be produced from grass seeds sown this spring, (on oats or wheat.) If this cannot be done, we would leave the pasture to produce what it would for this season,—and sow 2 or 3 acres, or more, of corn thickly for fodder, in the spring, This can be cut green if wanted and fed daily to cows and other stock if short of pasture, or can be cured for winter use, as mentioned on several occasions in our volume of the past year.

A mixture of peas and oats is very good for the same purposes—producing a large amount of excellent fodder, if cut a little before ripe.

Another crop that may be sown with great profit for producing a supply of hay for Winter, is MILLET. This need not be sown till June. We will speak of this again soon, and endeavor to procure a supply of the seed if wanted. The expense of seed will not exceed 50 or 75 cts. per acre.

If Spring *Tares* or *Vetches* could be obtained, they would be found just the thing for cutting green for summer feed. Have any of our English friends tried this crop in Ohio! If so we would like to hear the result. The same of *Lucern*, and *Crimson Trefoil*.

Plowing in Buckwheat as manure for wheat will be found highly beneficial on worn out, or naturally poor lands, especially when deficient in vegetable matter. It should be borne in mind, however, that in proportion to its bulk or weight, buckwheat contains a less quantity of solid matter or elements of nutrition than clover or almost any other plants. It is also found to contain a smaller per centage of the saline or mineral constituents than most others; hence if there is reason to suspect that the land is exhausted of these, lime or ashes should be added with the buckwheat, and plaster also, if not too expensive.

We shall speak more fully of the advantages of green crops as manure, before long; and an essay on the application of lime on wheat, &c., may be looked for in our next number.

Sowing Clover Seed.

Mr. H. Ridenhour, an experienced farmer of this (Franklin) county, and successful grower of wheat and clover, informs us that he does not approve of sowing clover seed quite as early as recommended by R. B. in our last. He prefers to wait till the danger of hard freezing is over, say the latter part of March. He does not care about having any snow on the ground, but if rain falls shortly after sowing, all the better.

He also disapproves of sowing clover on oats, as they are apt to grow so strong as to smother the clover, and do not come off as early as wheat, so as to allow as good a chance for full growth.

He recommends using a bushel of clover seed to 8 acres of land. His rule is the same for Timothy seed, or the two mixed.

Mr. Ridehour states that not less than 230 bushels of clover seed was raised by the farmers of one quarter of his township (Mifflin) the past year!

Pruning Fruit Trees.

The best fruit is generally found among the largest specimens of any particular variety;* and the exception will be found among such as have grown in the shade.

The largest specimens grow on thrifty branches; not more however, on young trees than on old ones that support thrifty shoots. Hence the great importance of judicious pruning, so that the sap may flow into fewer branches, giving them a larger growth—larger leaves, and larger fruit.

Another advantage of pruning, is to allow free access to the sun and air, without which the juices are not perfectly elaborated, and the fruit never attains its highest flavor. As an example: No correct idea can be formed of the excellence of the Swaar, or the Spitzenburgh, from such as have grown on stunted trees.

In this climate, some varieties of the apple, are damaged by smutty spots on the skin, (lichens,) which prevent the part so covered, from growing as fast as the rest of the fruit; and also prevent it from ripening. Instances may often be found in the Rhode Island Greening, where a part of the apple is mellow, while the smutty part is crude and green. For this defect, the best remedy is careful pruning, so as freely to admit the sun and air.

Biennial bearing is a habit to which some varieties of the apple are very subject, producing in one year an over-load of stunted fruit, but in the next, little or nothing. Of course, such varieties are of less value than if they were regular bearers; and like animals that work by fits and starts, their energies are ill directed. It appears that the nourishment and vigor of the tree is so much exhausted on the fruit, that none is left for the production of blossom buds for the next year. Now it is evident, that by lessening the number of buds, there will be more nourishment for them that remain; and if the pruning be close enough, there will be new twigs and blossoms for the following season.

Having thus shown the advantages of PRUNING the adverbs HOW and WHEN may next claim our attention.

In young trees, the branches are often so erect that the bark between them, is enclosed by the wood, which is insufficient to bind them together, especially when fruit, leaves, rain-drops and strong winds, all conspire to separate them. Let the knife or the saw then be applied in time—the sooner the better; and very little loss of bearing wood is sustained even when such shoots have been spared too long—for a thrifty tree soon recovers from such injuries.

The twigs that bear heavy crops for a few years, become stunted. Lessen the number of these annually, and at the same time, encourage new branches to be ready to take their places—never forgetting that *the best fruit grows on thrifty twigs.*

All crop bearing branches should be removed, with all others, that stand too near together. We want a free, open top.

Trees that are timely and judiciously trimmed, will not require the amputation of large limbs. Wherever this has to be done however, it would be well to apply paint to the naked part. It costs little; and if retouched once in two or three years, it would prevent the trunk from decaying, and from forming holes for the squirrels or blue birds.

Writers have differed much in opinion in regard to the best time for trimming trees, but I have performed the operation whenever I could conveniently attend to it, both in summer and in winter, in spring and in autumn; and I have found no difference worthy of notice. As autumnal pruning however, had been especially denounced, I was careful to paint the naked parts.

Persons employed to trim orchards, ought to have some idea of neatness, and to know that to

* The largest *sorts*, however, are very frequently not the best.

bruise or haggle a fruit tree, is very improper. To use an axe among them, requires a very careful hand. *To save skin* with the surgeon, and *to save bark* with the pruner, are maxims of great consequence. In cutting off branches, do it with a view to their healing over in the shortest time; and where the diameter is much thicker near the trunk, it may be well to insert the saw two or three inches higher on the limb. D. T.

Aurora, Cayuga co., N. Y.

Afflictive.—The following portion of a private note, received with the foregoing communication from our esteemed friend DAVID THOMAS, has caused us much sadness, and will be read with emotions of heartfelt sympathy and regret by his numerous friends and correspondents:

'*Dear Friend*:—Death has made sad inroads into our family since I saw thee last. Both my son, Abel, and his wife, (who lived in the house with us,) died last month, [Jan.] She on the 11th and he on the 20th. Both had been long out of health; he for 7 or 8 years with a bad cough, as thou may remember. I will trouble thee with no eulogies on his character, but he had managed my farming business for 25 years, and I almost feel as if I had lost my right arm.*** This event has thrown on me a double burden of care. My writing days are almost over.

Columbus Horticultural Society.—Notice of a meeting in our next.

MIAMI PORK.—The Miami valley may challenge the world in the production of Indian Corn and Pork. The following certificates of some specimens of the latter production, we find in the Germantown Gazette:

'Received at the Pork House of Messrs. Hoff & Deckert of Miamisburg, a lot of hogs consisting of *twenty-one*, aged 19 months, and raised by Messrs. Hains & Gaskins, on the farm of Mr. R. Hains, of Washington township, Montgomery county, and whose average weight was 431¼ lbs.! They severally weighed as follows: 488, 485, 445, 375, 400, 408, 397, 462, 439, 473, 422, 400, 443, 400, 421, 407, 873, 424, 527!, 453 and 408.'

SCIOTO AHEAD YET!—The following from the Chilicothe Advertiser, we think is a little ahead of the foregoing. The Montgomery porkers must try again!

'On Thursday last, the finest lot of hogs that we have ever seen, was killed at the slaughter house of John Marfield, in this city. They were owned by John H. Maxwell, of Green township, in this county. There were fifty-four hogs in the lot, and their average weight was 360 pounds. Fifty of these averaged THREE HUNDRED AND SEVENTY pounds each!! We give herewith the weight of nine ALL OF ONE LITTER. We doubt whether this has ever been beaten in the Union. 386, 454, 456, 452, 456, 526, 534, 516, 544.

These nine averaged a fraction less than FOUR HUNDRED AND SEVENTY pounds each.'

Latest discovery concerning the potatoe rot.—Among the items of the late English news, it is stated that a writer in the Edinburgh Witness, ascribes the potatoe disease to the anger of the Almighty, on account of the passing of the Maynooth grant!'

A drone should be as rare in society as in a hive of bees, and deserves to be treated in the same way.

ENGLISH NEWS.

Highly Important—Probable Repeal of the Corn Laws.

The Cambria bring dates to February 4th. The news is of a highly gratifying and important character. Parliament assembled on the 22d of January. The Queen's speech, and the remarks of the Prime Minister, were of a decidedly pacific character—affording assurance that the differences with this country respecting Oregon, will be settled without war. Sir Robert Peel has also declared the intentions of the Ministry, in relation to the exciting subject of the Corn laws, and recommends a great reduction of duties on bread stuffs and provisions generally, with further reductions annually for three years, at the end of which time all duties thereon shall cease!

It is confidently expected that this plan will be adopted by Parliament, though strong opposition will be made from the landed interests. Some influential members are strongly advocating the total and immediate repeal of all duties on bread stuffs and provisions. It is obvious from the tone of Sir Robert Peel's speech, and the leading papers of England, that a great revolution of opinions and policy in regard to matters of trade and commerce, is fast taking place there, and its influence will soon affect the commercial regulations of other countries. But we leave these matteas for others to discuss.

The following are the alterations proposed to be made immediately on articles in which the people of this country are mostly interested.

☞ *Remember that a Quarter of grain is 8 bushels, and the English shilling is equal to 24 cents.*

	PREVIOUS DUTY.	REDUCED TO
Bacon,	14s per cwt.	Free
Beef, fresh,	8s do	Free
" salted.	8s do	Free
Hay,	16s do	Free
Hides,	2d do	Free
Meat,	8s do	Free
Pork,	8s do	Free
Buckwheat,	— —	1s per quarter
Butter,	20s do	10s per cwt
Candles, tallow,	10s do	5s do
" Stearine,	— —	1½d per pound
Cheese,	10s 6d do	5s do
Clocks,	20 per cent	10 per cent
Clover seed,	10s do	5s per cwt
Hams,	14s per cwt	7s per cwt
Hops,	90s do	45s do
Indian Corn,	heavy duty	1s per quarter
" Meal,	— —	1s per cwt
Rice,	6s per cwt	1s do
Tallow,	3s 6d do	1s per cwt

WHEAT—Whenever the average price of wheat made up and published in the manner required by law shall be, for every quarter,

s.	d.
Under 48s, the duty shall be, for every quarter,	10 0
48s and under 46s	9 0
49s " 50s	8 0
50s " 51s	7 0
51s " 52s	6 0
52s " 57s	5 0
57s and upwards,	4 0

AT PRESENT—When the price is under 51s, the duty is 20s; 51s, and under 52s, 19s; 52s, and under 53s, 18s.

And deceasing progressively 1s duty for each shilling in price to 73s and upwards, when the duty is 1s.

FLOUR—For every barrel, being 196 lbs., there shall be a duty equal in amount to the duty payable on thirty-eight and a half gallons of wheat.

The average at present being 56s 1d the duty under the proposed new law would now be the minimum one of 4s per quarter on wheat, and 2s 5d per bbl. on flour, instead of the prohibitory rate of 16s per quarter and 9s 7½d per bbl. as it now is under the old existing law.

The American Provision Market was quite inactive, owing to the anticipated reduction of duties.

THE MARKETS.

CINCINNATI, Feb. 27. The news from England has not had any very material influence on trade as yet. Flour has advanced a trifle, and holders of provisions are more firm, but buyers and sellers all prefer to wait till the effects of the news on the Eastern markets may be known. Prices of nearly all kinds of articles remain the same as quoted in our last. Clover seed is $4,50 to $5, from stores. CATTLE, the Gazette says, 'we quote $2,50 @ 1,50 as the extremes of light and heavy Indiana and Kentucky Beef Cattle medium size, corn fed, sell generally at 3,12 @ 25. The inclination is now an upward one. A reliable letter from Chillicothe, to a provision dealer of this city, states that most of the fine beef cattle in the southern part of the Scioto Valley, have been bought up at $4,25 @ 4,37½.'

COLUMBUS PRODUCE MARKET.

[MARKET DAYS WEDNESDAYS AND SATURDAYS.]

GRAIN.			
Wheat, full wt., bu.,	75	a	
Indian corn,	23	a	25
Oats,	17	a	18
PROVISIONS.			
Flour retail, bbl.,	4,50	a	
" 100 lbs.	2,50	a	
" Buckwheat,	1,75	a	2,00
Indian meal, bu.	31	a	
Hominy, quart,	3	a	4
Beef, hd. qr			
" 100 lbs.,	2,50	a	2,75
" fore qr.,	1 75	a	2,00
Pork, large hogs,	3,25	a	
" small "	3,00	a	
Hams, country, lb.,	6	a	7
" city cured,	7	a	8
Lard, lb., ret.,	6¼	a	7
" in kgs. or bls.	6	a	
Butter, best rolls,	12½	a	
" common	9	a	10
" in kegs,	7	a	8
Cheese,	7	a	
Eggs, dozen,	8	a	9
Maple sugar, lb.			
" molasses, gal.			
Honey comb, lb.	10	a	12½
" strained	12½	a	14
POULTRY.			
Turkeys, each,	37	a	50
Geese, "	18	a	
Ducks, "	8	a	10
Chickens, "	8	a	10
SUNDRIES.			
Apples, bu.	1,50	a	
" dried,	1,50	a	1,75
Peaches, dried,	2,00	a	
Potatoes	37	a	400
Hay, ton,	5,00	a	6,0
Wood, hard, cord,	1,25	a	1,5
Salt, bbl.,	2,00	a	2,250
SEEDS.			
Clover, bu.,	4,00	a	4,25
Timothy,	2,00	a	2,50
Flax,	75	a	81
ASHES, (only in barter.)			
Pot, 100 lbs..	2,75	a	
Pearl,	3,50	a	
Scorched salts,	2,50	a	

Worthington Female Seminary.

THE spring term of this Institution, will commence on Thursday the 5th of March, and continue 22 weeks. TERMS as heretofore—Grammer, English branches, $4,00 per quarter. Natural, Intellectual and Moral Sciences, together with the Mathematics, $5,00 per quarter. Languages, Painting and Music, extra. The two former, $3,00 each, and the latter, including the use of the Piano, $10,00 per quarter.

Board, including bed and bedding, light and fuel, from $1,25 to $1,50 per week. A. NELSON, Principal.

Worthington, Franklin county, O.

FRUIT TREES

FOR SALE, at the Bowery Nursery, one and a half miles north of the State House in Columbus, on the Sandusky road, an extensive assortment of Fruit Trees, comprising the best American and Foreign varities of Apples, Pears, Peaches, Plums, Cherries, Apricots, Nectarines and Quinces, together with Ornamented Trees and Shrubbery, Grape Vines, Goosberries, Raspberries and Strawberries. Also a fine vrriety of Roses, Bulbs, &c.

Orders from a distance promptly attended to. Trees carefully packed and correctly labelled. Persons not familiar with the names of fruit will do well to leave the selection to the proprietor; in such cases those only will be sent of the most approved kinds, and when required, such as ripen in succession. JOHN FISHER.

March 1, 1846.

SUPERIOR GARDEN SEEDS,

For sale at the Office of the Ohio Cultivator.

[*Next building south of the Capitol, up stairs.*]

TO HORTICULTURISTS.

THE subscriber has the most extensive and rare collection of Fruits cultivated in any establishment in Ohio. He is desirous to let his Nursery on equitable shares for a term of years. Any one desiring to engage in the Nursery business possessing a good moral character and business habits will do well to apply immediately.

JOHN A. LAZELL.

Columbus, Feb. 27, 1846.

'SAMPSON' AND 'HERCULES.'

THE imported English Draft Horse 'Sampson,' and his three year old colt, 'Hercules,' will stand the ensuing season, at the Red Lion Hotel in Circleville.

TERMS.—For Sampson, $7 a single leap, $12 the season, and $15 to insure; for Hercules, $5, $8 and $10.

Mares from a distance will be taken by the season only, and charged the insuring price, with no extra charge for pasture.

B. F. EATON & BROTHERS.

Columbus and Circleville, March 1, 1846.

ROCHESTER COMMERCIAL NURSERY.

[*Rochester, N. Y.*]

THE subscribers offer for sale 200,000 fruit trees of different ages and kinds, *thoroughly tested* upon bearing trees in the city and vicinity. Also a good assortment of hardy ornamental trees and shrubs.

Persons ordering from us may depend upon their orders being *faithfully executed*, and the trees will be carefully packed and forwarded to any address. We can also furnish any amount of scions and young stock for nurseries at the west. All orders must be accompanied by cash, or if a credit is desired, a good reference.

BISSELL & HOOKER.

March 1, 1846.

MOUNT HOPE BOTANIC GARDEN AND NURSERIES, ROCHESTER, N. Y.

THE subscribers respectfully announce to their friends and the public, their present stock which they offer for sale the ensuing Fall of 1845 and Spring of 1846, is the finest ever grown in Western New York, and unsurpassed in quality by any establishment in the country.

The collection of fruits comprises the most esteemed varieties of the Apple, Pear, Peach, Plum, Apricot, Cherry, Nectarine, Almond, Grapes, &c.

The trees are well grown, thrifty, and beautiful, and have been propagated with such care as to ensure correctness.

All are warranted genuine as represented.

PEAR TREES on QUINCE STOCKS for DWARFS and PYRAMIDS, can also be furnished of the finest varieties. These will bear the first or second year after transplanting, and are beautifully adapted to garden culture.

3000 fine thrifty young trees of the famous New American Apple; the "Northern Spy," are also on hand.

STRAWBERRIES—All the fine new esteemed varieties, including Stoddard's new Alpine.

Also a large and fine collection of Ornamental Trees, Shrubs, Roses, (including a quantity of splendid *Standard or Tree Roses*, 3 to 6 feet high; Herbaceous Plants, Bulbous Roots, Double Dahlias, &c.

Our new descriptive catalogue will be sent *gratis* to all POST PAID applications.

Trees and Plants will be packed in the best style, and shipped to any port or place that may be designated.

☞ It is for the interest of purchasers that they forward their orders now, without delay, that they may be executed in proper season. Address ELLWANGER & BARRY.

March 1, 1846.

LAKE ERIE NURSERY.

THE Proprietors of this Nursery will have for sale the coming spring, one of the best selections of Fruit Trees ever offered for sale in Ohio. Many of the trees were grown by Professor J. P. Kirtland, under his own direct supervision. Some of them will be from the Nursery of Messrs. Downing, Newburgh, N. Y., while others have been grown upon our own grounds. The number of varieties will constitute about eighty of Pears, twenty-five or thirty of Cherries, thirty of Plums, about fifty of Peaches, one hundred varieties of Apples all the best varieties of Apricots, Nectarines, Quinces, Grapes, Strawberries, Raspberries, Gooseberries, &c. &c. We shall procure if possible all the new and most highly recommended varieties of Fruits from the east, and shall offer them at reasonable terms. We shall also have for sale a great variety of Ornamental Trees and Shrubs, Roses, &c., which have been growing in our own grounds. We have also Evergreen Trees of Norway Fir, Balsam Fir, Chinese and American Arbor Vitæ, Red Cedar, American and Swedish Junipers, Evergreen Cypress, Tree and Dwarf Box, Irish and English Yew, &c. &c.

We published in Nov. a list of our different varieties of fruits, with their times of ripening, which we will send to any one that desires.

Trees will be carefully packed when desired, and all orders accompanied with the money or a good city reference will meet with correct attention. ELLIOTT & CO.

Cleveland, Feb. 15, 1846.

FARM FOR SALE,

SITUATED seven miles and a half east from Lima, Allen county Ohio, on the State road from Lima to Marion, consisting of 260 acres of choice land, 165 acres improved, 130 young trees of a variety of choice fruit, a large frame barn and cow house, &c. The location for a residence is a pleasant and healthy one. The subscriber wishing to emigrate to Oregon, he offers said farm at the low price of 10 dollars per acre. ABEL TOMPKINS.

February 15, 1846.—3t.

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I am now in receipt of a full assortment of David Landreth's celebrated Garden Seeds.

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